FIG. 1
(Prior Art)

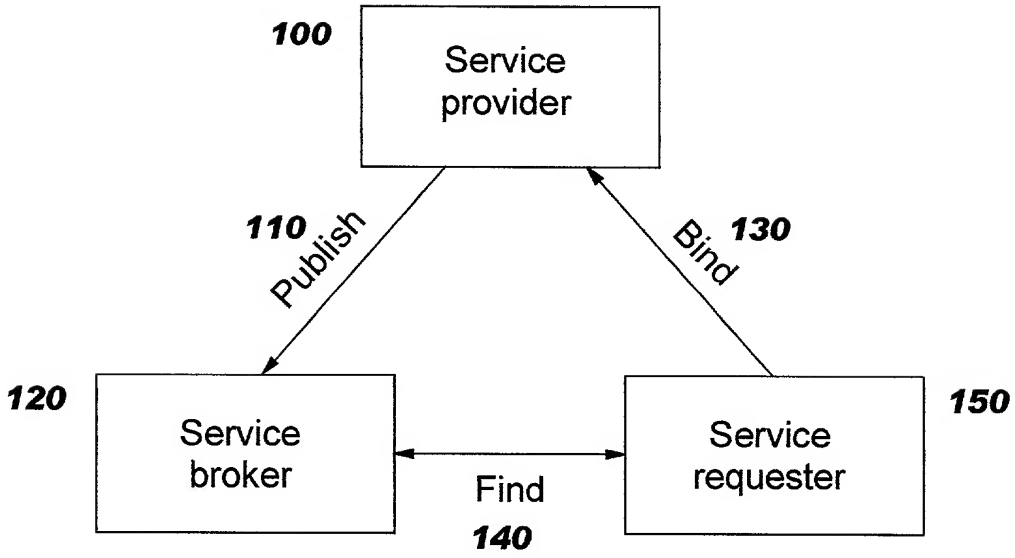


FIG. 2

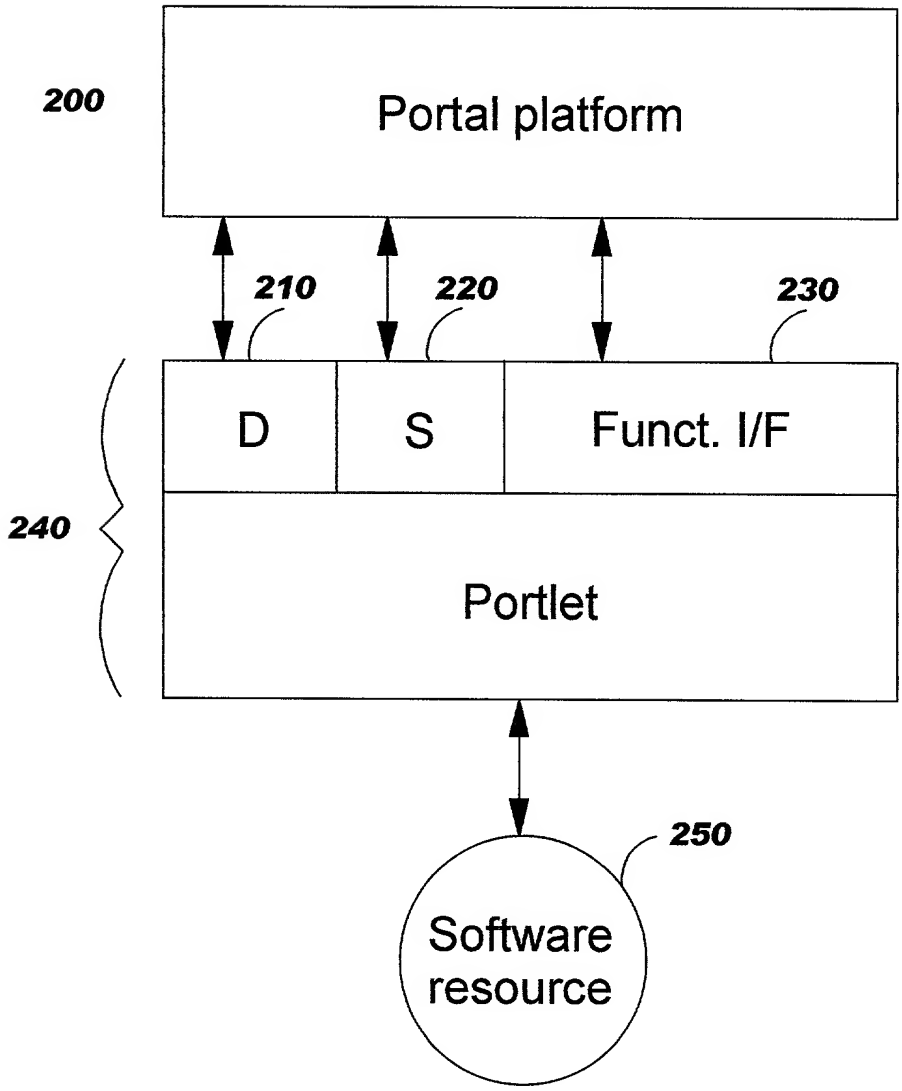

200
Portal platform
210
220
230
D
S
Funct. I/F
240
Portlet
250
Software resource

FIG. 3A

300

```
<?xml version="1.0"?>
<definitions
310    name="Deployment"
    targetNamespace="http://portal-definitions/Deployment.wsdl"
    xmlns:tns="http://portal-definitions/Deployment.wsdl"
    xmlns:wsfl="http://schemas.xmlsoap.org/wsfl/"
    xmlns="http://schemas.xmlsoap.org/wsdl/">

320 <message name="getDisplayNameInput">
    <part name="displayNameInput" element="xsd:nil"/>
</message>
<message name="getDisplayNameOutput">
    <part name="displayNameOutput" element="xsd:string"/>
</message>
<message name="getDisplayIcon16x16Input">
    <part name="displayIcon16x16Input" element="xsd:nil"/>
</message>
<message name="getDisplayIcon16x16Output">
    <part name="displayIcon16x16Output" element="xsd:image"/>
</message>
...

330 <portType name="DeploymentPortType">
      <operation name="getDisplayName">
          <input message="tns:getDisplayNameInput"/>
          <output message="tns:getDisplayNameOutput"/>
      </operation>
      <operation name="getDisplayIcon16x16">
          <input message="tns:getDisplayIcon16x16Input"/>
          <output message="tns:getDisplayIcon16x16Output"/>
      </operation>
      ...
</portType>
</definitions>
```

FIG. 3B1

FIG. 3B1
FIG. 3B2

FIG. 3B

350

```
<?xml version="1.0"?>
<definitions
    name="System"
    targetNamespace="http://portal-definitions/System.wsdl"
    xmlns:tns="http://portal-definitions/System.wsdl"
    xmlns:wsfl="http://schemas.xmlsoap.org/wsfl/"
    xmlns="http://schemas.xmlsoap.org/wsdl/">

<types>
      <schema xmlns="http://www.w3.org/2000/10/XMLSchema">
            <element name="Event">
                  <complexType>
                        <all>
                              <element name="uuid" type="xsd:string/>
                              <element name="type" type="xsd:string/>
                              <element name="when" type="xsd:date/>
                        </all>
                  </complexType>
            </element>
      </schema>
</types>
...
```

360

370

FIG. 3B2

```
380 <message name="logEventReceive">
      <part name="logEventInput" element="tns:Event"/>
    </message>
    <message name="reportInput">
      <part name="reportUsageResource" element="xsd:string"/>
      <part name="reportUsageQuantity" element="xsd:integer"/>
    </message>
    <message name="reportOutput">
      <part name="reportReturnCode" element="xsd:string"/>
    </message>
    ...
390 <portType name="SystemPortType">
      <operation name="logEvent">
        <input message="tns:logEventReceive"/>
      </operation>
      <operation name="reportUsage">
        <input message="tns:reportInput"/>
        <output message="tns:reportOutput"/>
      <operation/>
    ...
    </portType>
    ...
    </definitions>
```

FIG. 4

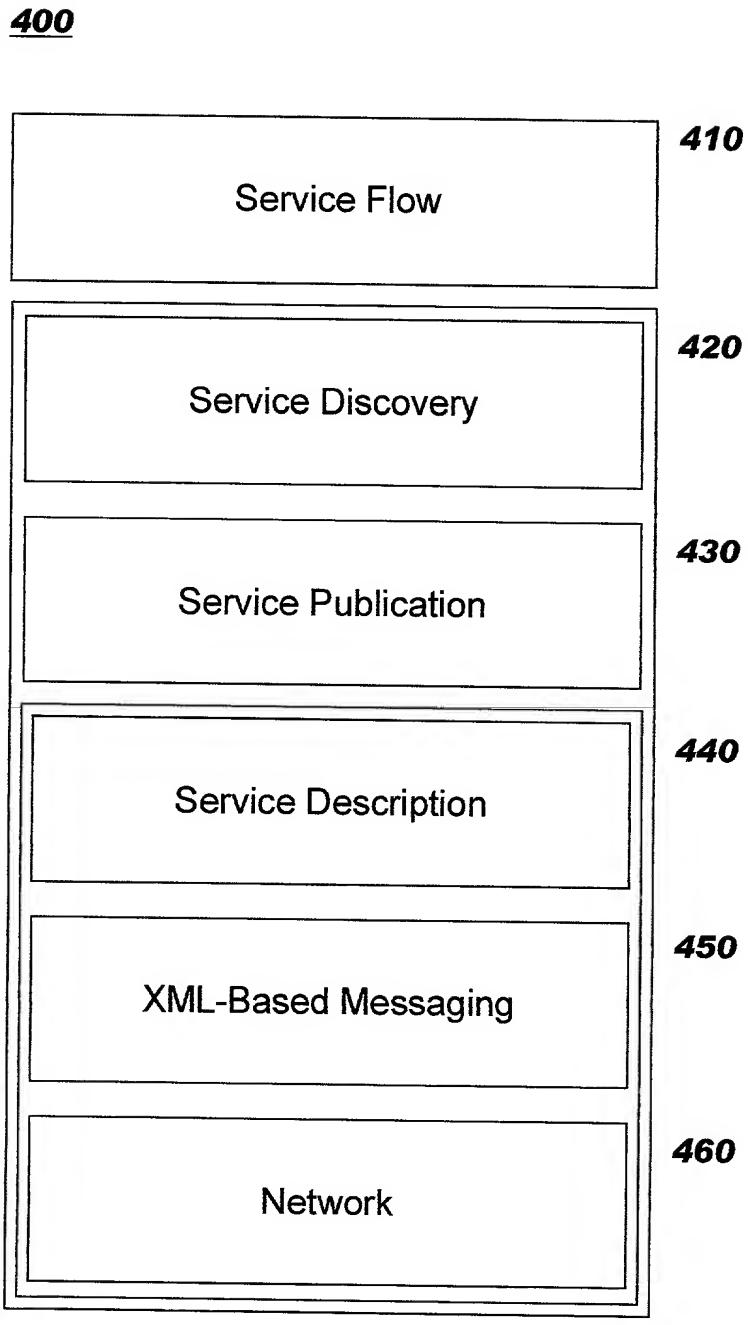

400
Service Flow
410
Service Discovery
420
Service Publication
430
Service Description
440
XML-Based Messaging
450
Network
460

FIG. 5A

500

502
```
<message name="InResolveProvisioningIDRequest">
  <part name="authToken" type="xsd:string"/>
</message>
```

504
```
<message name="OutResolveProvisioningIDResponse">
  <part name="Identifier" type="xsd:string"/>
</message>
```

506
```
<message name="InResolveUsersRequest">
  <part name="authToken" type="xsd:string"/>
  <part name="provID"  type="xsd:string"/>
</message>
```

508
```
<message name="OutResolveUsersResponse">
  <part name="UserSet" type="SOAP-ENC:Array"/>
</message>
```

510
```
<message name="InCreateUserProfileRequest">
  <part name="authToken" type="xsd:string"/>
  <part name="provID" type="xsd:string"/>
  <part name="userID" type="xsd:string"/>
  <part name="password" type="xsd:string"/>
  <part name="FullName" type=xsd:string"/>
  <part name="accessRights" type="SOAP-ENC:Array"/>
</message>
```

512
```
<message name="OutCreateUserProfileResponse>
  <part name="result" type="xsd:boolean"/>
</message>
```

FIG. 5B

514
```
<message name="InQueryUserProfileRequest">
  <part name="authToken" type="xsd:string"/>
  <part name="provID" type="xsd:string"/>
  <part name="userID" type="xsd:string"/>
<message>
```

516
```
<message name="OutQueryUserProfileResponse">
  <part name="password" type="xsd:string"/>
  <part name="FullName" type=xsd:string"/>
  <part name="accessRights" type="SOAP-ENC:Array"/>
</message>
```

518
```
<message name="InUpdateUserProfileRequest">
  <part name="authToken" type="xsd:string"/>
  <part name="provID" type="xsd:string"/>
  <part name="userID" type="xsd:string"/>
  <part name="password" type="xsd:string"/>
  <part name="FullName" type=xsd:string"/>
  <part name="accessRights" type="SOAP-ENC:Array"/>
</message>
```

520
```
<message name="OutUpdateUserProfileResponse">
  <part name="result" type="xsd:boolean"/>
</message>
```

522
```
<message name="InDeleteUserProfileRequest">
  <part name="authToken" type="xsd:string"/>
  <part name="provID" type="xsd:string"/>
  <part name="userID" type="xsd:string"/>
</message>
```

FIG. 5C

524
```
<message name="OutDeleteUserProfileResponse">
  <part name="result" type="xsd:boolean"/>
</message>
```

526
```
<message name="InSetConfigParameterRequest">
  <part name="authToken" type="xsd:string"/>
  <part name="provID" type="xsd:string"/>
  <part name="userID" type="xsd:string"/>
  <part name="parameterName" type="xsd:string"/>
  <part name="parameterValue" type="xsd:string"/>
</message>
```

528
```
<message name="OutSetConfigParameterResponse">
  <part name="result" type="xsd:boolean"/>
</message>
```

530
```
<message name="InGetConfigParameterRequest">
  <part name="authToken" type="xsd:string"/>
  <part name="provID" type="xsd:string"/>
  <part name="userID" type="xsd:string"/>
  <part name="parameterName" type="xsd:string"/>
</message>
```

532
```
<message name="OutGetConfigParameterResponse">
  <part name="parameterValue" type="xsd:string"/>
</message>
```

FIG. 5D

```
550 <portType name="ProvisioningService">
552   <operation name="ResolveProvisioningID">
        <input message="InResolveProvisioningIDRequest"/>
        <output message="OutResolveProvisioningIDResponse"/>
      </operation>

554   <operation name="ResolveUsers">
        <input message="InResolveUsersRequest"/>
        <output message="OutResolveUsersResponse"/>
      </operation>

556   <operation name="CreateUserProfile">
        <input message="InCreateUserProfileRequest"/>
        <output message="OutCreateUserProfileResponse"/>
      </operation>

558   <operation name="QueryUserProfile">
        <input message="InQueryUserProfileRequest"/>
        <output message="OutQueryUserProfileResponse"/>
      </operation>

560   <operation name="UpdateUserProfile"/>
        <input message="InUpdateUserProfileRequest"/>
        <output message="OutUpdateUserProfileResponse"/>
      </operation>
```

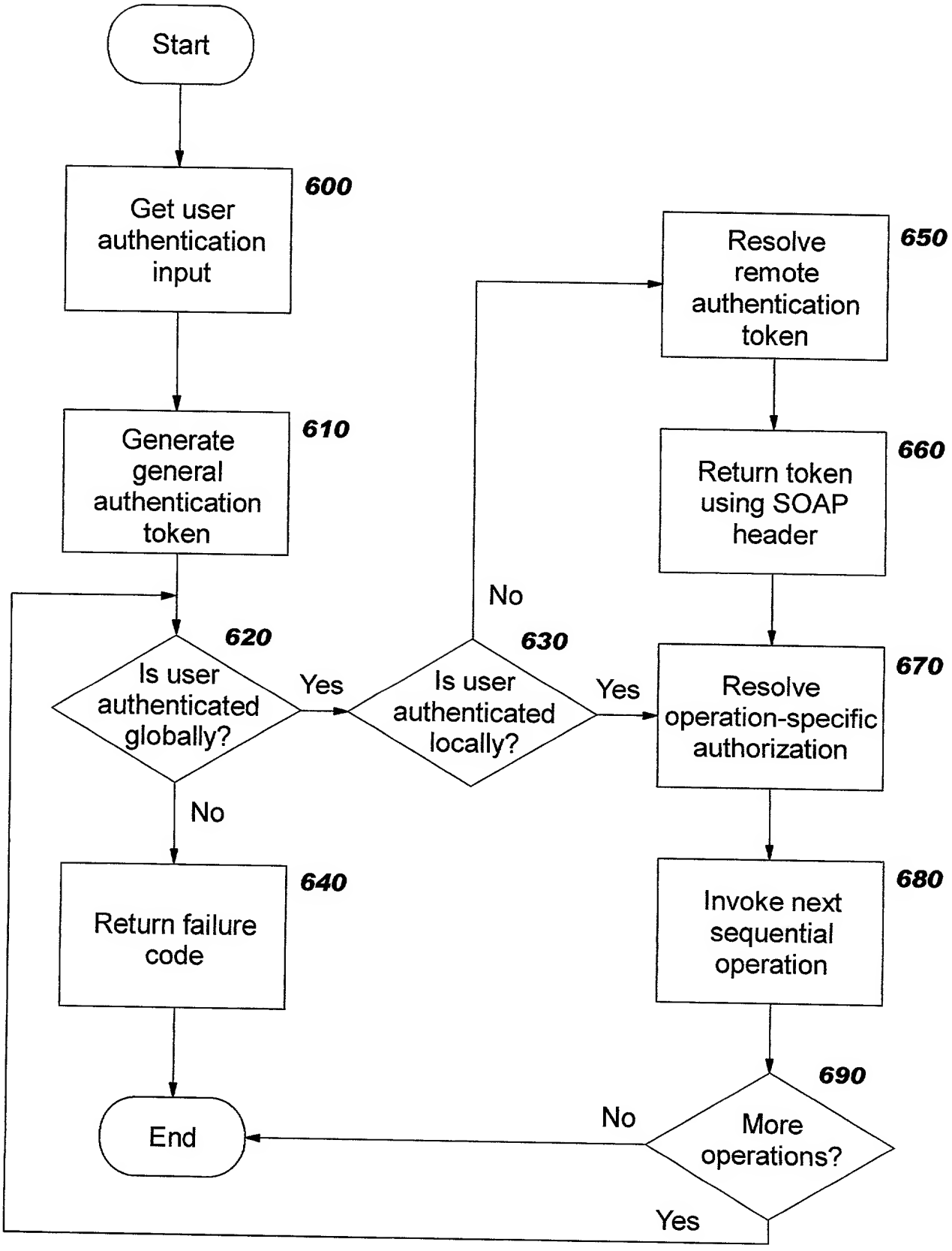
FIG. 5E

```
562     <operation name="DeleteUserProfile"/>
          <input message="InDeleteUserProfileRequest"/>
          <output message="OutDeleteUserProfileResponse"/>
        </operation>

564     <operation name="SetConfigParameter">
          <input message="InSetConfigParameterRequest"/>
          <output message="OutSetConfigParameterResponse"/>
        </operation>

566     <operation name="GetConfigParameter"/>
          <input message="InGetConfigParameterRequest"/>
          <output message="OutGetConfigParameterResponse"/>
        </operation>
      </portType>
```

FIG. 6


Start
Get user authentication input
600
Generate general authentication token
610
Is user authenticated globally?
620
Yes
No
Is user authenticated locally?
630
Yes
No
Resolve remote authentication token
650
Return token using SOAP header
660
Resolve operation-specific authorization
670
Invoke next sequential operation
680
More operations?
690
No
Yes
Return failure code
640
End

BOSTON TECHNOLOGY

FIG. 7A
(Prior Art)

700

```
SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
 <SOAP-ENV:Header>
  <SOAP-SEC:Signature xmlns:SOAP-SEC="http://schemas.xmlsoap.org/soap/security/2000-12"
   SOAP-ENV:actor="some-URI"
   SOAP-ENV:mustUnderstand="1">
   <ds:Signature xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
    <ds:SignedInfo>
     <ds:CanonicalizationMethod Algorithm="http://www.w3.org/TR/2000/CR-xml-c14n-20001026">
     </ds:CanonicalizationMethod>
     <ds:SignatureMethod Algorithm="http://www.w3.org/2000/09/xmldsig#dsa-sha1"/>
     <ds:Reference URI="#Body">
      <ds:Transforms>
       <ds:Transform Algorithm="http://www.w3.org/TR/2000/CR-xml-c14n-20001026"/>
      </ds:Transforms>
      <ds:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldsig#sha1"/>
      <ds:DigestValue>j6lwx3rvEPO0vKtMup4NbeVu8nk=</ds:DigestValue>
     </ds:Reference>
    </ds:SignedInfo>
    <ds:SignatureValue>MC0CFFrVLtRlk=...</ds:SignatureValue>
   </ds:Signature>
  </SOAP-SEC:Signature>
 </SOAP-ENV:Header>
```

710

720

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FIG. 7B
(Prior Art)

```
<SOAP-ENV:Body
   xmlns:SOAP-SEC="http://schemas.xmlsoap.org/soap/security/2000-12"
   SOAP-SEC:id="Body">
   <m:GetLastTradePrice xmlns:m="some-URI">
    <m:symbol>IBM</m:symbol>
   </m:GetLastTradePrice>
 </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

730

740